

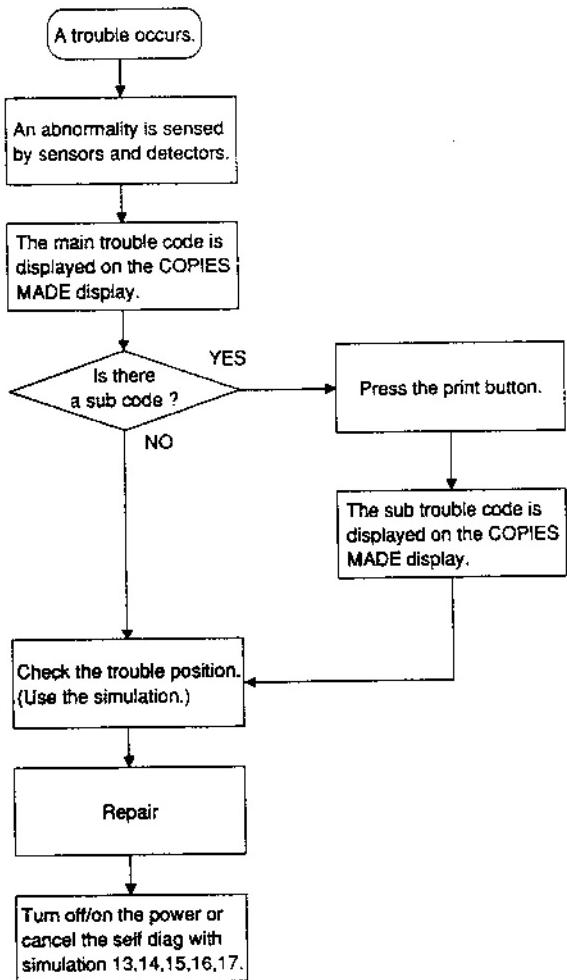
[9] SELF DIAGNOSTICS

1. General

This machine has self diagnostics to notify the customer and the serviceman when a trouble occurs during machine operation. The purposes of self diagnostics are as follows:

- 1) To assure safety when a trouble is sensed, the machine is stopped simultaneously.
- 2) To minimize machine damage, when a trouble is sensed, the machine is stopped simultaneously.
- 3) To know the exact area of the machine where the trouble occurred by using trouble codes, thereby shortening the recovery time of the machine. (For improved repair efficiency, the repair parts should be arranged in advance.)

2. Self diag operations and flowchart



3. Test commands used for the Self diag and cancel

Trouble code	Test command used to cancel
U1	T.C13
U2	T.C16
F3	T.C15
PF	T.C17
U4-02, 03/F2-33, 35/F3/L8-01, 02	POWER OFF-ON
CH/PC/NOT COPY READY	Cleared when the trouble is cancelled.
The other troubles	TC14

4. Self diag during execution of test command

EE/L2/L8-03/U5

5. Self diag sent to Modem I/F

F1-10/U4-02, 03/U5/F2-31, 32, 33, 35, 37/F3/L8-01, 02

(Note)

When the destination is set to "1" (Japan) or "4" (SEC) in TC26-6, judgement of self diag F2-31, 32, 37 is performed. When, however, set to the other destination, it is not performed.

6. Self diag list

Main code	Section	Sub code	Description	
L1	Optical	00	Content	Scanner unit feed trouble
			Details	The scanner unit does not complete feeding within 6 sec.
			Cause	1) Mirror motor control circuit defect 2) Main control PWB defect 3) Scanner unit drive section defect 4) Mirror motor unit defect
			Remedy	1) The scanner unit operation is checked with TC1-1. 2) The self diag display is cleared with TC14.
L2	Paper transport	00	Content	Resist roller operation trouble
			Details	During execution of TC7-2, 3, 7, the RRC ON (RRC in) signal from the mirror motor control PWB is not recognized in the main control PWB.
			Cause	1) Mirror motor control circuit defect 2) Main control PWB defect
			Remedy	1) Perform the copy operation to check the RRC ON (RRC in) signal. 2) Clear the self diag display with TC14.
L3		00	Content	Scanner unit return trouble
			Details	The scanner unit does not complete returning within 3.5 sec during initial operation or after scanning. (The home position is not sensed.)
			Cause	1) Mirror motor control circuit defect 2) Main control PWB defect 3) Scanner unit drive section defect 4) Mirror motor unit defect
			Remedy	1) Check the scanner unit operation with TC1-1. 2) Clear the self diag display with TC14.
L4	Process (Photoconductor drum drive section)	01	Content	Photoconductor drum drive section lock
			Details	The specified rpm is not detected within 1 sec after the photoconductor drum drive motor ON command is issued.
			Cause	1) Photoconductor drum motor control circuit defect 2) main control PWB defect 3) Drive section mechanical defect (lock, etc.) 4) Photoconductor drum drive motor unit defect
			Remedy	1) Check the photoconductor drum for normal rotations with TC25-1. 2) Clear the self diag display with TC14.
	Drive (Main motor)	02	Content	Drive section lock
			Details	The specified rpm is not detected within 1 sec after the main motor ON command is issued.
			Cause	1) Main motor control circuit defect 2) Main control PWB defect 3) Drive section mechanical defect (lock, etc.) 4) Main motor unit defect
			Remedy	1) Check the main motor for normal operation with TC25-1. 2) Clear the self diag display with TC14.
	Blower motor (Suction)	21	Content	Blower motor (suction) lock
			Details	The specified rpm is not detected within 1 sec after the blower motor ON command is issued.
			Cause	1) Blower motor control circuit defect 2) Main control PWB defect 3) Blower motor duct clogging (lock, etc.) 4) Blower motor defect
			Remedy	1) Check the blower motor for normal operation with TC6-2. 2) Clear the self diag display with TC14.
	Blower motor (Blow)	22	Content	Blower motor (blow) lock
			Details	The specified rpm is not detected within 1 sec after the blower motor ON command is issued.
			Cause	1) Blower motor control circuit defect 2) Main control PWB defect 3) Blower motor duct clogging (lock, etc.) 4) Blower motor defect
			Remedy	1) Check the blower motor for normal operation with TC6-2.

Main code	Section	Sub code	Description		
L4	Blower motor (Blow)	22	2) Clear the self diag display with TC14.		
L5	Optical	01	Content	Lens, No. 4/5 mirror feed trouble	
			Details	1) The lens and the No. 4/5 mirror do not reach the specified positions within 12.5 sec after the drive signal is issued.	
			Cause	1) Mirror motor control circuit defect 2) Main control PWB defect 3) Lens or No. 4/5 mirror drive motor defect 4) Lens or No. 4/5 mirror drive system defect	
			Remedy	1) Check the lens unit and the No. 4/5 mirror unit operations with TC1-3. 2) Clear the self diag display with TC14.	
		02	Content	Lens initial trouble	
			Details	1) The lens does not complete the initial operation within 12.5 sec after the drive signal is issued.	
			Cause	1) Mirror motor control circuit defect 2) Main control PWB defect 3) Lens drive motor defect 4) Lens drive system defect	
			Remedy	1) Check the lens unit operation with TC1-3. 2) Clear the self diag display with TC14.	
		04	Content	No. 4/5 mirror initial trouble	
			Details	The No. 4/5 mirror does not complete the initial operation within 10 sec after the drive signal is issued.	
			Cause	1) Mirror motor control circuit defect 2) Main control PWB defect 3) No. 4/5 mirror drive motor defect 4) No. 4/5 mirror drive system defect	
			Remedy	1) Check the No. 4/5 mirror unit operation with TC1-3. 2) Clear the self diag display with TC14.	
L8	DC power unit	01	Content	Zero cross pulse (FW) trouble	
			Details	1) The zero cross pulse is not issued. 2) Zero cross pulse (FW) output level abnormality 3) The zero cross pulse is not sensed.	
			Cause	1) DC power unit defect 2) Main control PWB defect	
			Remedy	1) Check the zero cross pulse (FW) waveform with an oscilloscope. 2) Clear the self diag display with TC14.	
		02	Content	Zero cross pulse (FW) trouble	
			Details	1) The zero cross pulse (FW) frequency exceeds the specified range. 50Hz (46.15 – 53.93Hz), 60Hz (55.59 – 64.86Hz)	
			Cause	1) DC power unit defect 2) Main control PWB defect 3) AE sensor defect 4) Copy lamp defect	
			Remedy	1) Check the zero cross pulse (FW) waveform with an oscilloscope. 2) Clear the self diag display with TC14.	
		03	Content	AE sensor trouble	
			Details	1) During execution of TC47, through the copy lamp voltage changes, the change in the AE sensor level is not sensed.	
			Cause	1) AC power unit defect 2) Main control PWB defect 3) AE sensor defect 4) Copy lamp defect	
			Remedy	1) Check the copy lamp voltage and the AE sensor output with TC47. 2) Clear the self diag display with TC14.	
EE	Developer	EU	Content	Toner density sensor trouble (Undertoner)	
			Details	1) The toner density sensor output level 3.3V or more is detected with TC25-2 during toner density initial setting.	
			Cause	1) Toner density sensor defect 2) Main control PWB defect	
			Remedy	1) Check the toner density sensor output level with TC25-1. 2) Clear the self diag display with TC14.	

Main code	Section	Sub code	Description	
EE	Developer	EL	Content	toner density sensor trouble (Overtoner)
			Details	1) The toner density sensor output level 1.45V or less is detected with TC25-2 during toner density initial setting.
			Cause	1) Toner density sensor defect 2) Main control PWB defect
			Remedy	1) Check the toner density sensor output level with TC25-1. 2) Clear the self diag display with TC14.
H2	Fuser	00	Content	Thermistor trouble
			Details	1) Thermistor open (The thermistor input pin voltage 4.5 V or more is sensed.)
			Cause	1) Thermistor defect 2) Main control PWB defect 3) Fuser section connector defect 4) Fuser section connector SW defect
			Remedy	1) Check the thermistor line. 2) Check the line between the thermistor and the main control PWB. 3) Clear the self diag display with TC14.
H3		00	Content	Abnormal temperature in the fuser section
			Details	1) The heat roller temperature exceeds 228°C. (thermistor input terminal voltage 1.3V or more is detected.)
			Cause	Thermistor defect 2) Main control PWB defect 3) AC power PWB defect 4) Fuser connector defect 5) Fuser connector SW defect
			Remedy	1) Check the thermistor and its input circuit. 2) Check the heater lamp ON signal and the drive circuit with TC5-2. 3) Clear the self diag display with TC14.
H4		00	Content	Abnormal temperature in the fuser section
			Details	1) The specified temperature (200°C) is not reached within 7 min after the power relay is turned on. (The thermistor input terminal voltage 1.84V or more is detected.)
			Cause	1) Thermistor defect 2) Main control PWB defect 3) AC power PWB defect
			Remedy	1) Check the thermistor and its control circuit. 2) Check the heater lamp ON signal and the drive circuit with TC5-2. 3) Clear the self diag display with TC14.
U0	Main control PWB, operation PWB	00	Content	Data communication trouble between the main control PWB and the operation PWB. (Judged by the main control PWB.)
			Details	1) Serial communication parity, framing, overrun errors. (Judged by the CPU.)
			Cause	1) PWB (RDH, finisher, framing, operation, auditor, mirror motor) in the slave side defects 2) Main control PWB defect
			Remedy	1) Check the data communication line between the main control PWB and the slave PWB. 2) Clear the self diag display with TC13.
U1	Main control PWB	01	Content	SRAM backup battery 1 voltage drop
			Details	1) SRAM backup battery 1 voltage 2.2V or less is detected.
			Cause	
			Remedy	1) Follow the battery replacement procedure. 2) Clear the self diag display with TC13.
		02	Content	SRAM backup battery 2 voltage drop
			Details	1) SRAM backup battery 1 voltage 2.2V or less is detected.
			Cause	
			Remedy	1) Follow the battery replacement procedure. 2) Clear the self diag display with TC13.
		03	Content	SRAM backup battery 1 and 2 voltage drop
			Details	1) SRAM backup battery 1 and 2 voltages 2.2V or less are detected.
			Cause	

Main code	Section	Sub code	Description	
U1	Main control PWB	03	Remedy	1) Follow the battery replacement procedure. 2) Clear the self diag display with TC13.
U2	Main control PWB	01	Content	Memory sum check error
			Details	1) SRAM memory data and EEPROM memory data are changed. (Note) When this trouble occurs, the data in the SRAM and the EEPROM are not reliable.
			Cause	1) Main control PWB defect
			Remedy	1) Perform remedy for U2 trouble. 2) Clear the self diag display with TC16.
U3	Optical	00	Content	Data communication trouble between the main control PWB and the mirror motor PWB.
			Details	1) Serial communication parity, framing, overrun errors (Judged by the CPU.)
			Cause	1) Main control PWB defect 2) Mirror motor PWB defect
			Remedy	1) Check the communication line between the main control PWB and the mirror motor PWB.
		20	Content	Minor motor rotary encoder output signal trouble
			Details	1) The mirror motor rotary encoder output signal is not detected within 100 msec after the mirror motor ON signal is issued.
			Cause	1) Main control PWB defect 2) Mirror motor PWB defect 3) Mirror motor drive section lock 4) Minor motor defect
			Remedy	1) Check the mirror motor rotary encoder output signal with TC1-1. 2) Clear the self diag display with TC14.
		21	Content	Scanner unit home position trouble
			Details	1) The mirror home position sensor OFF is sensed when the scanner unit starts scanning. 2) The mirror home position sensor ON is sensed at the timing of scanner unit return. (The scanner home position sensor output signal is not sensed normally.)
			Cause	1) Main control PWB defect 2) Mirror motor PWB defect 3) Mirror motor drive section lock 4) Mirror motor defect 5) Mirror home position sensor defect
			Remedy	1) Check the scanner unit home position sensor output signal with TC1-2. 2) Clear the self diag display with TC14.
		23	Content	Scanner unit initial operation trouble
			Details	1) It takes 5 sec or more to initialize the scanner unit.
			Cause	1) Main control PWB defect 2) Mirror motor PWB defect 3) Mirror motor drive section defect 4) Mirror motor defect 5) Mirror home position sensor defect
			Remedy	1) Check the initial operation with TC1-1. 2) Clear the self diag display with TC14.
		26	Content	Mirror motor drive power voltage drop
			Details	1) Mirror motor drive power voltage falls below 26V.
			Cause	1) Mirror motor PWB defect 3) Mirror motor drive section defect 4) Mirror motor defect 5) DC power PWB defect
			Remedy	1) Check the mirror motor drive power voltage. 2) Clear the self diag display with TC14.
		41	Content	Lens shift operation trouble
			Details	1) In initial operation, though the lens motor drive pulse is issued for max. shift distance + 100 steps, the lens home position sensor output polarity change is not detected. 2) In lens shifting, though the lens drive pulse is issued, the lens home position sensor output polarity change is not detected.
			Cause	1) Mirror motor PWB defect 2) Lens home position sensor defect

Main code	Section	Sub code	Description	
U3	Optical	41	3) Lens motor drive section lock 4) Lens motor defect	
			Remedy	1) Check the lens shift operation with TC1-3. 2) Clear the self diag display with TC14.
		42	Content	No. 4/5 mirror shift operation trouble
			Details	1) In initial operation, though the No. 4/5 mirror motor drive pulse is issued for max. shift distance + 100 steps, the No. 4/5 mirror home position sensor output polarity change is not detected. 2) In No. 4/5 mirror shifting, though the drive pulse is issued, the No. 4/5 mirror home position sensor output polarity change is not detected.
			Cause	1) Mirror motor PWB defect 2) No. 4/5 mirror home position sensor defect 3) No. 4/5 mirror motor drive section lock 4) No. 4/5 mirror motor defect
			Remedy	1) Check the No. 4/5 mirror shift operation with TC1-3. 2) Clear the self diag display with TC14.
		02	Content	Paper width alignment plate operation trouble
			Details	1) The paper width alignment plate home position is not detected within 5 sec.
			Cause	1) Paper width alignment plate home position sensor defect 2) Paper width alignment plate drive motor defect 3) paper width alignment plate drive section defect 4) Main control PWB defect
			Remedy	1) Check the paper width alignment plate home position sensor output. 2) Check the paper width alignment plate drive circuit and the mechanism. 3) Clear the self diag display with TC14.
		03	Content	Paper transport direction alignment plate home position sensor operation trouble
			Details	1) The paper transport direction alignment plate home position is not detected within 5 sec.
			Cause	1) Paper transport direction alignment plate home position sensor defect 2) Paper transport direction alignment plate driver motor defect 3) paper transport direction alignment plate drive motor erect 4) Main control PWB defect
			Remedy	1) Check the paper transport direction alignment plate home position sensor output. 2) Check the paper transport direction alignment plate drive circuit and the mechanism. 3) Clear the self diag display with TC14.
U5	RDH	00	Content	Data communication trouble between the main control PWB and the RDH control PWB
			Details	1) Serial communication parity, framing, overrun errors (Judged by the CPU.)
			Cause	1) Main control PWB defect 2) RDH control PWB defect
			Remedy	1) Check the data communication line between the main control PWB and the RDH control PWB. 2) Clear the self diag display with TC14.
		11	Content	RDH paper feed motor (UFM) trouble
			Details	1) The lock signal (UFMLD) polarity change is not detected within 110 ms after the paper feed motor ON signal is issued at power ON. 2) The UFMDIR signal polarity change is not detected within 380 ms after the paper feed motor reverse signal is issued in preliminary paper feed operation. 3) The UFMDiR signal HIGH level is detected within 30 ms though the paper feed motor ON signal is issued at power ON.
			Cause	1) RDH control PWB defect 2) RDH paper feed motor defect 3) RDH paper feed mechanism defect 4) RDH paper feed motor rotation sensor defect
			Remedy	1) Check the RDH operation with TC2-1, 2, 3. 2) Clear the self diag display with TC14.
		12	Content	RDH transport motor (UTM) trouble
			Details	1) The lock signal (UTMLD) polarity change is not detected within 10 ms after the transport motor ON signal is issued. (Check is made only when a coy is produced in the first RDH mode after turning on the power.) 2) The UTMDiR polarity change is not detected within 380 ms after the transport motor reversion signal is issued.

Main code	Section	Sub code	Description	
U5	RDH	12		3) The UTMDIR polarity change is detected within 50 ms after the transport motor reversion signal is issued.
			Cause	1) RDH control PWB defect 2) RDH transport motor defect 3) RDH transport mechanism defect 4) RDH transport motor rotation sensor defect
			Remedy	1) Check the RDH operation with TC2-1, 2, 3. 2) Clear the self diag display with TC14.
		13	Content	RDH paper exit motor (UOM1) trouble
			Details	1) The lock signal (UOM1LD) polarity change is not detected within 1 sec after the RDH paper exit motor (UOM1) ON signal is issued.
			Cause	1) RDH control PWB defect 2) RDH paper exit (UOM1) motor defect 3) RDH paper exit mechanism defect 4) RDH paper exit motor (UOM1) rotation sensor defect
			Remedy	1) Check the RDH operation with TC2-1, 2, 3. 2) Clear the self diag display with TC14.
		14	Content	RDH paper exit motor (UOM2) trouble
			Details	1) The lock signal (UOM2LD) polarity change is not detected within 1 sec after the RDH paper exit motor (UOM2) ON signal is issued.
			Cause	1) RDH control PWB defect 2) RDH paper exit (UOM2) motor defect 3) RDH paper exit mechanism defect 4) RDH paper exit motor (UOM2) rotation sensor defect
			Remedy	1) Check the RDH operation with TC2-1, 2, 3. 2) Clear the self diag display with TC14.
		15	Content	RDH valve motor trouble
			Details	1) The valve home position signal (UBPD) is not detected within 30 sec after the separation fan motor is issued.
			Cause	1) RDH control PWB defect 2) Separation fan motor defect 3) Valve mechanism defect 4) Valve home position sensor defect 5) Separation fan ventilation section defect
			Remedy	1) Check the RDH operation with TC2-1, 2, 3. 2) Clear the self diag display with TC14.
		16	Content	RDH suction fan motor trouble
			Details	1) The lock signal (UVFMLD) polarity change is not detected within 1 sec after the suction fan motor ON signal is issued.
			Cause	1) RDH control PWB defect 2) Suction fan motor defect 3) Suction mechanism defect 4) Suction fan ventilation section defect
			Remedy	1) Check the RDH operation with TC2-1, 2, 3. 2) Clear the self diag display with TC14.
		17	Content	RDH blower fan motor trouble
			Details	The lock signal (UBFMLD) polarity change is not detected within 1 sec after the separation fan motor ON signal is issued.
			Cause	1) RDH control PWB defect 2) Separation fan motor defect 3) Separation fan mechanism defect 4) Separation fan ventilation section defect
			Remedy	1) Check the RDH operation with TC2-1, 2, 3. 2) Clear the self diag display with TC14.
U7	MODEM/I/F	00	Content	Data communication trouble with the copier and the host computer
			Cause	1) Main control PWB defect 2) MODEM I/F defect 3) MODEM communication line defect 4) Host computer defect 5) MODEM defect

Main code	Section	Sub code	Description	
U7	MODEM/I/F	00	Remedy	1) If the cause is not determined earlier, cancel the copy inhibition in case of communication trouble with TC27-1. 2) Replace the defective unit. 3) Clear the self diag display with TC14.
U8	Expansion memory	00	Content	Expansion memory installation trouble
			Details	1) Defective contact between the expansion memory and the main control PWB 2) Improper setting of TC26-3
			Cause	1) Expansion memory defect 2) Expansion memory socket and plug contact defect 3) Main control PWB defect 4) Though TC26-3 is set to "Expansion memory YES", no expansion memory is mounted actually.
			Remedy	1) Check the setting of TC26-3. 2) Check contact of the expansion memory socket and plug. 3) Clear the self diag display with TC14.
			Content	Expansion memory initial trouble
		01	Details	When an expansion memory is newly installed and TC26-3 is set to "Expansion memory YES", initializing is not performed. Though the initializing execution key is pressed, initializing is not performed.
			Cause	1) Expansion memory defect 2) Expansion memory socket, plug contact defect 3) Main control PWB defect 4) Though TC26-3 is set to "Expansion memory YES", initializing is not performed.
			Remedy	1) Check the setting of TC26-3, and perform initializing. 2) Check the contact of expansion memory socket and plug. 3) Clear the self diag display with TC14.
			Content	Main corona unit trouble
			Details	1) Main corona unit output short (The trouble signal is detected.)
C1	High voltage unit	00	Cause	1) Main corona unit output short 2) High voltage unit defect 3) TC8-2, 3, 4 improper adjustment 4) Overvoltage
			Remedy	1) Check the main corona unit output for short. 2) Check the high voltage unit trouble signal. 3) Check and adjust the main corona unit voltage. 4) Clear the self diag display with TC14.
			Content	Transfer corona unit output short
			Details	1) Transfer corona unit output short (The trouble signal is detected.)
			Cause	1) Transfer corona unit output short 2) High voltage unit defect 3) TC8-6 adjustment defect 4) Overvoltage
			Remedy	1) Check the transfer corona unit output for short. 2) Check the high voltage unit trouble signal. 3) Check and adjust the transfer corona unit voltage. 4) Clear the self diag display with TC14.
C3		00	Content	Separation corona unit trouble
			Details	1) Separation corona unit output short (The trouble signal is detected.)
			Cause	1) Separation corona unit output short 2) High voltage unit defect 3) TC8-7 adjustment defect 4) Overvoltage
			Remedy	1) Check the separation corona unit output for short. 2) Check the high voltage unit trouble signal. 3) Check and adjust the separation corona unit voltage. 4) Clear the self diag display with TC14.
			Content	Data communication trouble between the main control PWB and the finisher control PWB
F1	Finisher	00	Details	1) Serial communication parity, framing, overrun errors (Judged by the CPU.)

Main code	Section	Sub code	Description	
F1	Finisher	00	Cause	1) Main control PWB defect 2) Finisher control PWB
			Remedy	1) Check the data communication line between the main control PWB and the finisher control PWB.
		01	Content	Jogger home position sense trouble
			Details	1) Though the specified pulses (255) of the jogger motor drive signal are issued in initializing operation, the jogger home position is not detected. 2) Though the specified pulses (255) of the jogger motor drive signal are issued in staple operation, the jogger home position is not detected.
			Cause	1) Main control PWB defect 2) Finisher control PWB defect 3) Jogger motor defect 4) Jogger home position sensor defect 5) Jogger mechanism section defect
			Remedy	1) Check the finisher operation with TC3-2, 3. 2) Clear the self diag display with TC14.
		04	Content	Elevator home position detection trouble
			Details	1) The elevator home position sensor ON is not detected within 2.5 sec after the finisher elevator motor ascending command is issued. 2) The elevator home position sensor OFF is not detected within 2.5 sec after the finisher elevator motor descending command is issued.
			Cause	1) Main control PWB defect 2) Finisher control PWB defect 3) Elevator motor defect 4) Elevator home position sensor defect 5) Elevator mechanism defect
			Remedy	1) Check the finisher operation with TC3-2, 3. 2) Clear the self diag display with TC14.
		06	Content	Shift home position detection trouble
			Details	1) The shift home position sensor output polarity change is not detected within 1 sec after the shift motor drive signal is issued.
			Cause	1) Main control PWB defect 2) Finisher control PWB defect 3) Shift motor defect 4) Shift home position sensor defect 5) Shift mechanism defect
			Remedy	1) Check the finisher operation with TC3-2, 3. 2) Clear the self diag display with TC14.
		10	Content	Staple home position detection trouble
			Details	1) The staple home position sensor output change is not detected within 0.4 sec after the staple motor drive signal is issued.
			Cause	1) Main control PWB defect 2) Finisher control PWB defect 3) Staple motor defect 4) Staple home position sensor defect 5) Staple mechanism defect
			Remedy	1) Check the finisher operation with TC3-2, 3. 2) Clear the self diag display with TC14.
		11	Content	Kicker home position detection trouble
			Details	1) The kicker home position or the kicker position sensor ON is not detected though the specified pulses (450) of the kicker motor drive signal are issued.
			Cause	1) Main control PWB defect 2) Finisher control PWB defect 3) Staple motor defect 4) Kicker home position sensor defect 5) Kicker position sensor defect 6) Kicker mechanism defect
			Remedy	1) Check the finisher operation with TC3-2, 3. 2) Clear the self diag display with TC14.
		12	Content	Gate home position detection trouble
			Details	1) The gate home position sensor output polarity change is not detected though the specified pulses (300) of the gate switch motor drive signal are issued.

Main code	Section	Sub code	Description	
F1	Finisher	12	Cause	1) Main control PWB defect 2) Finisher control PWB defect 3) Gate switch motor defect 4) Gate home position sensor defect 5) Gate mechanism defect
			Remedy	1) Check the finisher operation with TC3-2, 3. 2) Clear the self diag display with TC14.
		13	Content	Tray guide operation trouble
			Details	1) The tray guide lower sensor or the tray guide lower sensor ON signal is not detected though the specified pulses (450) of the tray guide upper motor ON signal are issued.
			Cause	1) Main control PWB defect 2) Finisher control PWB defect 3) Tray guide motor defect 4) Tray guide upper or lower sensor defect 5) Tray guide mechanism defect
			Remedy	1) Check the finisher operation with TC3-2, 3. 2) Clear the self diag display with TC14.
		00	Content	Toner density sensor trouble
			Details	1) The toner density sensor output is not in the range of 0.7 - 4.6V.
			Cause	1) Toner density sensor defect 2) Toner density sensor dirt 3) main corona grid voltage adjustment defect 4) Developer defect 5) Toner density defect 6) Developer unit defect (Doctor gap/MG roller main pole position) 7) Main control PWB defect 8) Developer unit connector defect
			Remedy	1) Check the toner density sensor output with TC25-1. 2) Clear the self diag display with TC14.
		31	Content	Photoconductor base surface detection trouble
			Details	1) When measuring the photoconductor base surface, the image density sensor output is not in the range of 2.8V - 4.65V.
			Cause	1) Image density sensor defect 2) Image density sensor dirt 3) Photoconductor drum insufficient cleaning 4) Developer bias voltage adjustment defect 5) Blank lamp defect 6) Main control PWB defect 7) Photoconductor drum defect
			Remedy	1) Check the set values and the defective positions of the process unit with TC44-7, 9. 2) Clear the self diag display with TC14.
		32	Content	Photoconductor drum mark detection trouble
			Details	1) The photoconductor drum mark is not detected.
			Cause	1) Photoconductor drum mark sensor defect 2) Photoconductor drum mark sensor dirt 3) Photoconductor drum insufficient cleaning 4) Blank lamp defect 5) Main control PWB defect 6) Photoconductor drum defect
			Remedy	1) Check the set values and the defective positions of the process unit with TC44-7, 9. 2) Clear the self diag display with TC14.
		33	Content	In the main corona grid voltage correction, the reference main corona grid voltage is not obtained within the specified voltage range.
			Details	
			Cause	1) Image density sensor defect 2) Image density sensor dirt 3) Main corona grid voltage adjustment defect 4) High voltage unit defect 5) Developing bias voltage adjustment defect

Main code	Section	Sub code	Description	
F2	Process	33	6) Toner density defect 7) Developer unit defect (Doctor gap/MG roller main pole position) 8) Main control PWB defect 9) Photoconductor drum defect	
			Remedy	1) Check the set values and the defective positions of the process unit with TC44-7, 9, and TC8-2, 3, 4. 2) Clear the self diag display with TC14.
		35	Content	The patch image density measurement is abnormally high or low.
			Details	
			Cause	1) Image density sensor defect 2) Image density sensor dirt 3) Main corona grid voltage adjustment defect 4) High voltage unit defect 5) Developing bias voltage adjustment defect 6) Toner density defect 7) Developer unit defect (Doctor gap/MG roller main pole position) 8) Main control PWB defect 9) Photoconductor drum defect
			Remedy	1) Check the set values and the defective positions of the process unit with TC44-7, 9, and TC8-2, 3, 4. 2) Clear the self diag display with TC14.
		37	Content	Photoconductor drum mark sensor gain adjustment trouble
			Details	1) The photoconductor drum mark sensor output is not in the range of 2.6V - 4.1V.
			Cause	1) Photoconductor drum mark sensor defect 2) Photoconductor drum mark sensor dirt 3) Photoconductor drum insufficient cleaning 4) Blank lamp defect 5) Main control PWB defect 6) Photoconductor drum defect
			Remedy	1) Check the set values and the defective positions of the process unit with TC44-7, 9. 2) Clear the self diag display with TC14.
F3	Paper tray 1	11	Content	Paper tray motor PT disc sensor trouble
			Details	1) The paper tray motor rotation sensor output signal is not detected within 200 ms after the paper tray motor ON signal is issued.
			Cause	1) Paper tray motor rotation sensor defect 2) Paper tray motor defect 3) Paper tray mechanism defect 4) Main control PWB defect
			Remedy	1) Check the paper tray operation with TC6-3. 2) Clear the self diag display with TC15.
		12	Content	Paper tray lift-up trouble
			Details	1) The paper upper limit sensor ON signal is not detected within 22 sec after the paper tray motor lift up signal is issued. 2) The paper lower limit sensor ON signal is not detected within 1.6 sec after the paper tray motor lift up signal is issued.
			Cause	1) Paper tray upper limit sensor defect 2) Paper tray lower limit sensor defect 3) Paper tray motor defect 4) Paper tray mechanism defect 5) Main control PWB defect
			Remedy	1) Check the paper tray operation with TC6-3. 2) Clear the self diag display with TC15.
			Content	Paper tray lift down trouble
		13	Details	1) The paper lower limit sensor ON signal is not detected within 22 sec after the paper tray motor lift down signal is issued. 2) The paper upper limit sensor ON signal is not detected within 1.6 sec after the paper tray motor lift down signal is issued.
			Cause	1) Paper tray upper limit sensor defect 2) Paper tray lower limit sensor defect 3) Paper tray motor defect 4) Paper tray mechanism defect 5) Main control PWB defect

Main code	Section	Sub code	Description	
F3	Paper tray 1	13	Remedy	1) Check the paper tray operation with TC6-3. 2) Clear the self diag display with TC15.
			Content	Paper tray motor PT disc sensor trouble
		21	Details	1) The paper tray motor rotation sensor output signal is not detected within 200 ms after the paper tray motor ON signal is issued.
			Cause	1) Paper tray motor rotation sensor defect 2) Paper tray motor defect 3) Paper tray mechanism defect 4) Main control PWB defect
			Remedy	1) Check the paper tray operation with TC6-3. 2) Clear the self diag display with TC15.
	Paper tray 2	22	Content	Paper tray lift up trouble
			Details	1) The paper upper limit sensor ON signal is not detected within 12 sec after the paper tray motor lift up signal is issued. 2) The paper lower limit sensor OFF signal is not detected within 1.6 sec after the paper tray motor lift up signal is issued.
			Cause	1) Paper tray upper limit sensor defect 2) Paper tray lower limit sensor defect 3) Paper tray motor defect 4) Paper tray mechanism defect 5) Main control PWB defect
			Remedy	1) Check the paper tray operation with TC6-3. 2) Clear the self diag display with TC15.
			Content	Paper tray lift down trouble
F2	Paper tray 2	23	Details	1) The paper lower limit sensor ON signal is not detected within 12 sec after the paper tray motor lift down signal is issued. 2) The paper upper limit OFF signal is not detected within 1 sec after the paper tray motor lift down signal is issued.
			Cause	1) Paper tray upper limit sensor defect 2) Paper tray lower limit sensor defect 3) Paper tray motor defect 4) Paper tray mechanism defect 5) Main control PWB defect
			Remedy	1) Check the paper tray operation with TC6-3. 2) Clear the self diag display with TC14.
	Paper tray 3	31	Content	Paper tray motor PT disc sensor trouble
			Details	1) The paper tray motor rotation sensor output signal is not detected within 200 ms after the paper tray motor ON signal is issued.
			Cause	1) Paper tray motor rotation sensor defect 2) Paper tray motor defect 3) Paper tray mechanism defect 4) Main control PWB defect
			Remedy	1) Check the paper tray operation with TC6-3. 2) Clear the self diag display with TC14.
			Content	Paper tray lift up trouble
	32	32	Details	1) The paper upper limit sensor ON signal is not detected within 12 sec after the paper tray motor lift up signal is issued. 2) The paper lower limit sensor OFF signal is not detected within 1.6 sec after the paper tray motor lift up signal is issued.
			Cause	1) Paper tray upper limit sensor defect 2) Paper tray lower limit sensor defect 3) Paper tray motor defect 4) Paper tray mechanism defect 5) Main control PWB defect
			Remedy	1) Check the paper tray operation with TC6-3. 2) Clear the self diag display with TC15.
			Content	Paper tray lift down trouble
			Details	1) The paper lower limit sensor ON signal is not detected within 12 sec after the paper tray lift motor lift down signal is issued. 2) The paper upper limit sensor OFF signal is not detected within 1 sec after the paper tray motor lift down signal is issued.
	33	33	Cause	1) Paper tray upper limit sensor defect

Main code	Section	Sub code	Description	
F2	Paper tray 3	33	2) Paper tray lower limit sensor defect 3) Paper tray motor defect 4) Paper tray mechanism defect 5) Main control PWB defect	
			Remedy	1) Check the paper tray operation with TC6-3. 2) Clear the self diag display with TC15.
CH	Cabinet SW	Light	Content	The cabinet open/close SW is not closed.
			Details	1) The cabinet open/close SW ON is not detected.
			Cause	1) Cabinet open/close SW is not closed. 2) Cabinet open/close SW defect 3) Main control PWB defect 4) DC power defect (Fuse F709) 5) Paper tray is not closed.
			Remedy	When the trouble is cancelled, the self diag is automatically cancelled.
		Blink	Content	Developer unit not detected
			Details	1) The developer unit is not detected.
			Cause	1) The developer unit is not installed. 2) Developer unit connector defect 3) Main control PWB defect
			Remedy	When the trouble is cancelled, the self diag is automatically cancelled.
PC	AUDitor Personal counter		Content	Card type counter card not inserted/personal counter not inserted
			Details	1) The card of the card type counter is not detected. 2) The personal counter is not detected.
			Cause	1) The card counter (SF-EA11) is not inserted. 2) The card counter (SF-EA11) is not inserted though TC26-3 is set to the card counter mode. 3) Card counter (SF-EA11) defect 4) Personal counter not inserted 5) Personal counter defect 6) Main control PWB defect
			Remedy	When the trouble is cancelled, the self diag is automatically cancelled.
			Content	Card counter not inserted/personal counter not inserted
The copier does not go into the ready state.	Auditor Personal counter		Details	1) The card counter is not detected. 2) The personal counter is not detected.
			Cause	1) The card counter (SF-EA11) is not inserted. 2) The card counter (SF-EA11) is not inserted though TC26-3 is set to the card counter mode. 3) Card counter (SF-EX11) defect 4) Personal counter not inserted 5) Personal counter defect 6) Main control PWB defect
			Remedy	When the trouble is cancelled, the self diag is automatically cancelled.
			Content	Copy inhibition command is issued from the host computer.
			Details	
PF			Cause	1) Copy inhibition command is issued from the host computer. 2) Main control PWB defect
			Remedy	1) Contact the host computer to cancel the copy inhibition command. 2) Set TC27-1 to ignore the copy inhibition command from the host computer.